

## Health Risks Among Rhode Island High School Students, 1997–2007

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### The Centers for Disease Control and Prevention (CDC)

report that 72% of all deaths in the 10–24 age group in the United States result from motor-vehicle crashes, other unintentional injuries, homicides, and suicides. Each year there are 757,000 pregnancies among 15–19 year olds, and an estimated 9.1 million cases of sexually transmitted diseases among persons aged 15–24 years. Almost 59% of deaths among adults over 25 result from cardiovascular disease and cancer. The US Department of Health and Human Services outlined youth-related objectives in their *Healthy People 2010* report.<sup>1</sup>

Several behaviors that typically begin during youth are responsible for these major sources of mortality, morbidity, and social problems; e.g., carrying weapons, physical fighting, attempted suicide, drinking while driving, lack of seatbelt use, lack of bicycle helmet use, unprotected sexual intercourse, tobacco use, unhealthy dietary behaviors, and physical inactivity.<sup>2</sup> This report examines 10-year trends in health risk behaviors among Rhode Island public high school students.<sup>3</sup>

### METHODS

The CDC has sponsored a national and state Youth Risk Behavior Survey (YRBS) since 1991, including the 2007 YRBS in 60 states and municipalities. Rhode Island has conducted a high school YRBS in odd numbered years since 1995 as a joint effort of the Departments of Health and Education and other state agencies. The voluntary survey is self-administered among randomly selected public high schools and students in grades 9–12.

The YRBS monitors health-risk behaviors related to injuries, tobacco, alcohol and other drugs, sexual behavior, weight and nutrition, and physical activity. This article highlights the prevalence of these behaviors during five survey cycles from 1997–2007. With the exception of 1999 when there were insufficient data, Rhode Island achieved overall response rates greater than 60% in samples of 1,400 to 2,400 high school students in each survey year. These rates were sufficiently high to enable the CDC to weight the self-reported data, which are then considered representative of the entire public high school population.

### RESULTS

There were statistically significant trends for 13 of 16 key behaviors presented here of which all but 3 represented improvements in healthy practices. These behaviors are a cross-section of the over 80 questions in the YRBS. Regarding injuries (Figure 1), there were improving trends between 1997 and 2007 in the proportion of students using seatbelts (67% to 86%), wearing bicycle helmets (9% to 20%), and riding with a driver who has been drinking (36% to 28%). In contrast, attempted suicide (in past year) remained unchanged at nearly 10%.

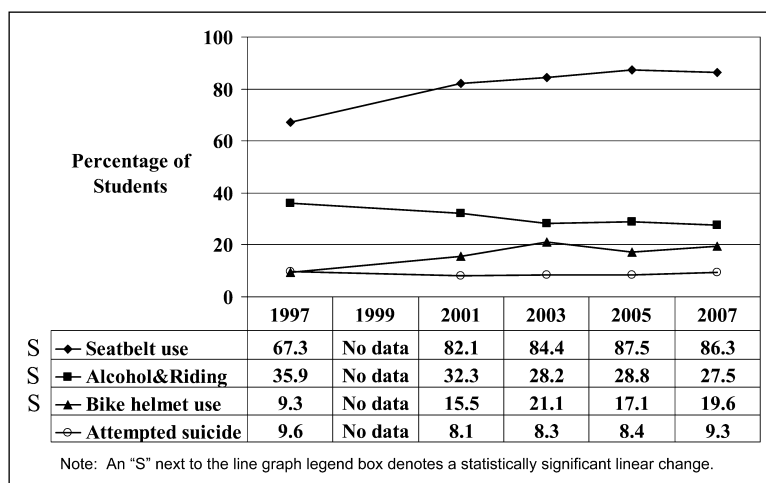


Figure 1. Health risks for personal safety and suicide related injuries, students in grades 9–12, Rhode Island, 1997–2007.

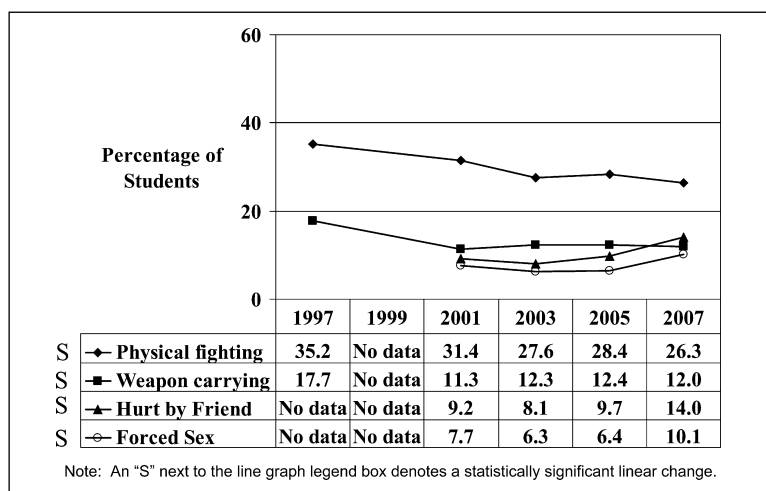


Figure 2. Health risks for violence related injuries, students in grades 9–12, Rhode Island, 1997–2007.

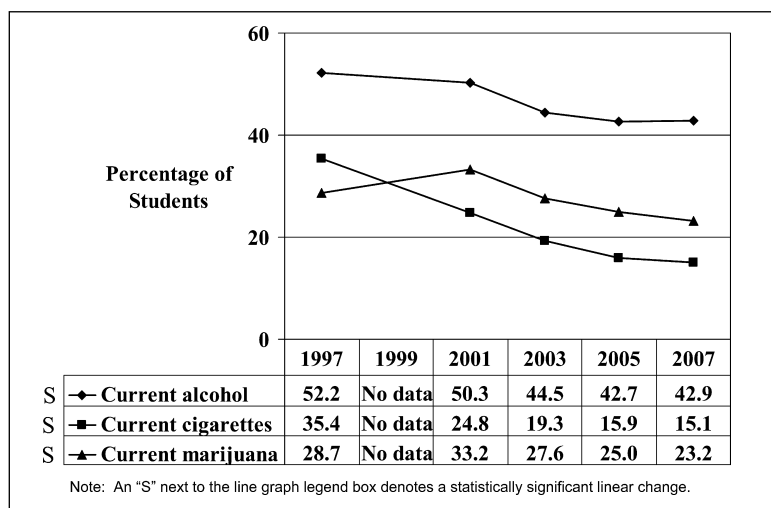


Figure 3. Health risks for substance abuse, students in grades 9-12, Rhode Island, 1997-2007.

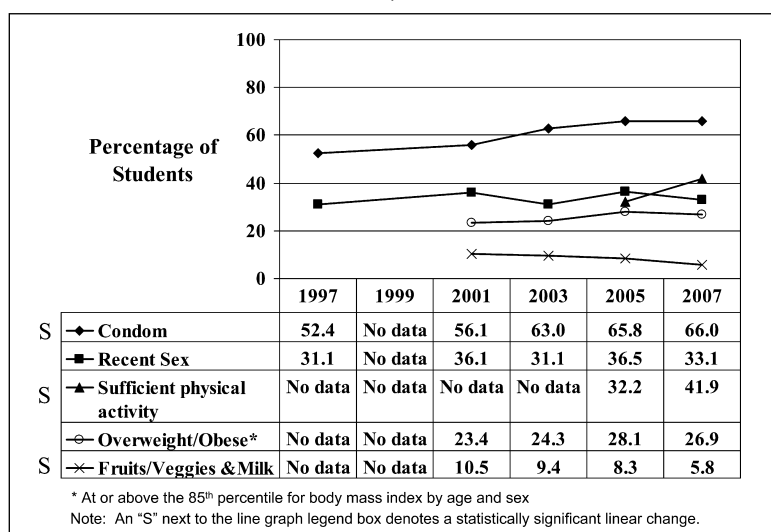


Figure 4. Health risks for sexual behavior, weight, nutrition, and physical activity, students in grades 9-12, Rhode Island, 1997-2007.

Among violence-related behaviors (Figure 2), there were significant improvements between 1997 and 2007 in physical fighting in the past year (35% to 26%) and weapon carrying in the past month (17% to 12%). However, there was a significant worsening trend between 2001 and 2007 in being hurt (hit or slapped) by a girlfriend or boyfriend in the past year (9% to 14%) and forced sexual intercourse ever (8% to 10%). Figure 3 shows significant improvements between 1997 and 2007 in current (past month) alcohol (52% to 43%), cigarette (35% to 15%), and marijuana use (29% to 23%).

Recent sexual intercourse (past 3 months) remained unchanged at about one third of students from 1997-2007. (Figure 4) In contrast, more students wore a condom during last sexual intercourse (52% to 66%). The trend from 2001 to 2007 for overweight or obese students was relatively stable (23% to 27%).

From 2001-2007 fewer students consumed an adequate amount of fruits, vegetables, and milk (11% to 6%). The CDC standard is 5+ servings of fruits and vegetables per day and 3+ glasses of milk per day. However, the percentage for sufficient

physical activity (60+ minutes per day for 5+ days per week) increased significantly from 2005-2007 (32% to 42%).

## DISCUSSION

There were improving trends between 1997 and 2007 among public high school students in seatbelt and bicycle helmet use; riding in a vehicle with a driver who has been drinking; physical fighting; weapon carrying; current alcohol, cigarette, and marijuana use; condom use; and physical activity. However, the 2007 data show 4 in 5 students who ride a bicycle still do not wear a helmet; 3 in 5 have insufficient physical activity; 2 in 5 are current alcohol drinkers; 1 in 3 have had recent sex; and 1 in 4 ride in a vehicle with an impaired driver, have been in a physical fight, or are overweight or obese, respectively.

The YRBS also highlights significant worsening trends in nutrition: only 6% of students in 2007 consumed an adequate amount of both fruits/vegetables and milk. Even more distressing, individual proportions for dating violence and forced sexual intercourse increased to where more than 1 in 10 students are victims. Furthermore, can society ever consider any level of attempted suicide among adolescents to be acceptable?

The YRBS is a comprehensive tool that state and community organizations can utilize to provide data for needs assessment and for planning and evaluating health promotion programs for youth. The survey is also a major source for monitoring objectives in *Healthy Rhode Islanders 2010*,<sup>4</sup> the state-specific version of the national *Healthy People 2010*. These objectives pertain to physical activity, overweight and obesity, tobacco use, substance abuse, and sexual behavior. *Healthy Rhode Islanders 2010* serves as a guide for targeting programs and a benchmark for assessing progress in youth-oriented efforts.

## Disclosure of Financial Interests

The authors have no financial interests to disclose.

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